- 1 WHAT IS CLAIMED IS:
- 2 1. A chip comprising a plurality of sensors.

- 4 2. A chip of claim 1 comprising a plurality of sensors,
- 5 each of which contains one or more light sources and one or
- 6 more optical detectors.

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- 8 3. A chip of claim 2 in which the light source is an
- 9 electro-luminescent material.

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- 11 4. A chip of claim 2 in which the light source is an organic
- 12 electroluminescent material.

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- 14 5. A chip of claim 2 in which the light source is an
- 15 inorganic electroluminescent material.

- 17 6. A chip of claim 2 in which the light source is connected
- 18 by conductive electrodes.

2	7. A chip of claim 2 in which the detector is a
3	semiconducting material.
4	
5	8. A chip of claim 2 in which the detector is composed of
6	amorphous silicon.
7	
8	9. A chip of claim 2 in which the detector is tuned to
9	respond to a specific wavelength range of light.
10	
11	10. A chip of claim 2 with multiple detectors in which each
12	detector is tuned to a different wavelength range of light.
13	
14	11. A chip of claim 2 with multiple detectors in which each
15	detector is tuned to a different wavelength range of light
16	and the output of these detectors produces a spectra.
17	

12. A chip of claim 2 with multiple detectors in which each

- 1 detector is tuned to a different wavelength range of light
- 2 and each detector is connected by conductive electrodes.

- 4 13. A chip of claim 2 in which each sensor is coupled to a
- 5 bioactive material.

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- 7 14. A chip of claim 2 in which each sensor is coupled to a
- 8 protein.

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- 10 15. A chip of claim 2 in which each sensor is coupled to an
- 11 antibody.

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- 13 16. A chip of claim 2 in which each sensor is coupled to a
- 14 fluorescence-labeled antibody.

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- 16 17. A chip of claim 2 in which each sensor is coupled to an
- 17 organic dye.

- 1 18. A chip of claim 2 in which each sensor is coupled to a
- 2 porous gel.

- 4 19. A chip of claim 2 in which each sensor is coupled to a
- 5 porous gel doped with an organic dye.

6

- 7 20. A chip of claim 2 in which each sensor is coupled to a
- 8 porous gel doped with a protein or enzyme.

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- 10 21. A chip of claim 2 in which each sensor is coupled to a
- 11 porous gel containing an antibody.
- 12 22. A chip of claim 2 in which each sensor is coupled to a
- 13 porous gel encapsulating a living cell.

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- 15 23. A chip of claim 2 in which each sensor is coupled to a
- 16 porous silica gel.

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18 24. A chip of claim 2 in which each sensor is coupled to a

1 porous silica gel doped with an organic dye.

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- 3 25. A chip of claim 2 in which each sensor is coupled to a
- 4 porous silica gel doped with a protein or enzyme.

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- 6 26. A chip of claim 2 in which each sensor is coupled to a
- 7 porous silica gel containing an antibody.

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- 9 27. A chip of claim 2 in which each sensor is coupled to a
- 10 porous silica gel encapsulating a living cell.
- 11 28. A chip of claim 2 in which each sensor is coupled to a
- 12 porous silica gel microsphere.

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- 14 29. A chip of claim 2 in which each sensor is coupled to a
- 15 porous silica gel microsphere doped with an organic dye.

- 17 30. A chip of claim 2 in which each sensor is coupled to a
- 18 porous silica gel microsphere doped with a protein or

1 enzyme	•
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- 3 31. A chip of claim 2 in which each sensor is coupled to a
- 4 porous silica gel microsphere containing an antibody.

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- 6 32. A chip of claim 2 in which each sensor is coupled to a
- 7 porous silica gel microsphere encapsulating a living cell.